

FEE TRANSMITTAL

Patent fees are subject to annual revision.

Complete If Known

Application Number	10/728850
Filing Date	8 December 2003
First Named Inventor	Hyung-Bok LEE
Examiner Name	A. Boateng
Group/Art Unit	2838
Attorney Docket No.	P56980

TOTAL AMOUNT OF PAYMENT

(\$ **500.00**)**METHOD OF PAYMENT (check one)****1. ■ Payment Enclosed:
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☒ Check ☐ Credit Card ☐ Money Order ☐ Other

☐ Charge Any Additional Fee Required Under 37 C.F.R. §1.16 and 1.17.

☐ Applicant claims small entity status. See 37 CFR 1.27
**2. ■ The Commissioner is hereby authorized to charge
any deficiency and credit any over payments to:**Deposit Account Number: **02-4943****FEE CALCULATION**

Fee Code	Fee (\$)	Fee Code	Fee (\$)	Fee Description	Fee Paid
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EXTENSION OF TIME FEES

1251	120	2251	60	Extension for reply within first month	\$
1252	450	2252	225	Extension for reply within second month	\$
1253	1020	2253	510	Extension for reply within third month	\$
1254	1590	2254	795	Extension for reply within fourth month	\$
1255	2160	2255	1080	Extension for reply within fifth month	\$

APPEAL

1401	500	2401	250	Notice of Appeal	\$
1402	500	2402	250	Filing a brief in support of an appeal	\$500
1403	1000	2403	500	Request for oral hearing	\$

CLAIMS

1201	200	2201	100	Independent claims in excess of 3	\$
1202	50	2202	25	claims in excess of 20 (4)	\$

Other Fee (specify) _____ \$

Other Fee (specify) _____ \$

Other Fee (specify) _____ \$

SUBTOTAL: LEFT COLUMN \$500.00**FEE CALCULATION**

Fee Code	Fee (\$)	Fee Code	Fee (\$)	Fee Description	Fee Paid
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MISCELLANEOUS

1801	\$790	2801	\$395	Request for continued examination (RCE)	\$
1806	\$180			Submission of an IDS	\$
1814	\$130	2814	\$65	Statutory disclaimer	\$
8021	\$40			Recordation of assignment per property	\$

TRADEMARK

6001/7001		\$335	Application for registration, per class	\$
6002/7002		\$100	Amendment to Allege Use, per class	\$
6003/7003		\$100	Statement of Use, per class	\$
6004/7004		\$150	Request for six-month extension of time, per class	\$
6205/7205		\$100	\$8 affidavit, per class	\$
6208/7208		\$200	\$15 affidavit, per class	\$
6201/7201		\$400	Application for renewal, per class	\$
6403/7403		\$100	Ex parte appeal, per class	\$

PETITION

1462		\$400	Petitions to Director (Group I)	\$	
1463		\$200	Petitions to Director (Group II)	\$	
1464		\$130	Petitions to Director (Group III)	\$	
1452	\$500	2452	\$250	Petitions to revive unavoidably abandoned application	\$
1453	\$1500	2453	\$750	Petitions to revive unintentionally abandoned application	\$

PATENT MAINTENANCE

1551	\$900	2551	\$450	Due at 3.5 years	\$
1552	\$2300	2552	\$1150	Due at 7.5 years	\$
1553	\$3800	2553	\$1900	Due at 11.5 years	\$

Other Fee (specify) _____ \$

Other Fee (specify) _____ \$

Other Fee (specify) _____ \$

SUBTOTAL: RIGHT COLUMN \$0.00**SUBMITTED BY****Complete (if applicable)**

Typed or Printed Name

Robert E. Bushnell, Esq.

Reg. Number

27,774

Signature

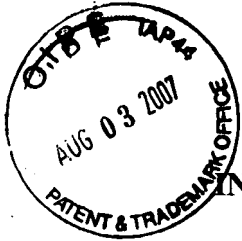
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Attorney Dkt.
P56980

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of:

Hyung-Bok LEE

Serial No.: 10/728,850

Examiner: A. Boateng

Filed: 8 December 2003

Art Unit: 2838

For: COMPACT SAFETY DEVICE FOR A POUCH-TYPE SECONDARY
BATTERY UNIT HAVING MANY INDIVIDUAL BATTERIES

Appeal No. _____

Mail Stop Appeal Briefs - Patents
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

ATTENTION: Board of Patent Appeals and Interferences

APPELLANT'S BRIEF (37 CFR §41.37)

This brief is in furtherance of the Notice of Appeal filed in this case on 5 June 2007.

The accompanying fee required under 37 CFR §41.20(b)(2) for the filing of the Appellant's Brief are dealt with in the accompanying transmittal letter.

Folio: P56980

Date: 8/3/07

I.D.: REB/MDP/kf

08/06/2007 JADD01 00000035 10728850

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Attorney Dkt.
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Attorney Dkt.
P56980

I. STATEMENT OF REAL PARTY IN INTEREST

Pursuant to 37 CFR §41.37(c)(1)(i) the real party in interest is:

SamSung Electronics Co., Ltd.
416 Maetan-dong, Yeongtong-gu,
Suwon-si, Gyeonggi-do,
Republic of Korea

II. RELATED APPEALS AND INTERFERENCES

Pursuant to 37 CFR §41.37(c)(1)(ii), there are no appeals nor interferences known to the Appellant, the Appellant's legal representative, or the Assignee (real party of interest) which will directly affect or be directly affected by or have a bearing on the Board's decision in the pending appeal.

III. STATUS OF CLAIMS

Claims 1-11, 13-17, 19 and 20 are pending, finally rejected and appealed herein.

IV. STATUS OF AMENDMENTS FILED AFTER FINAL REJECTION

No amendment has been made after the final rejection.

V. SUMMARY OF CLAIMED SUBJECT MATTER

Claim 1

Claim 1 is directed towards a *pouch-type secondary battery unit*, comprising, as shown in FIGS. 3A and 3B:

a first secondary battery cell (20) comprising a first secondary battery body (25) and a first case (24), the first secondary battery body being disposed inside the first case, the first secondary battery cell further comprising a first positive electrode (26) terminal and a first negative electrode (28) terminal perforating out from said first case;

a second secondary battery cell (30) comprising a second secondary battery body (35) and a second case (34), the second secondary battery body being disposed within the second case, the second secondary battery cell further comprising a second positive electrode terminal (36) and a second negative electrode terminal (38) perforating out from said second case; and

a safety circuit board (40) disposed in an external void (49) within said battery unit, said external void being defined as being in between the first and second secondary battery cells, the safety circuit being electrically connected to the first and second positive electrode terminals and to the first and second negative electrode terminals.

Specification

[0030] FIGS. 3A and 3B illustrate a battery unit 10 according to the first embodiment of the present invention. Referring to FIGS. 3A and 3B, the battery unit 10 has a first and second pouch-type secondary battery cells 20 and 30, and a safety circuit board 40, which is installed in a space between the first and second secondary battery cells 20 and 30. Safety circuit board 40

electrically connects first and second positive electrode terminals 26 and 36 and first and second negative electrode terminals 28 and 38 of cells 20 and 30 together.

[0031] The first and second secondary battery cells 20 and 30 are made up of first and second cases 24 and 34, respectively. The first and second cases 24 and 34 respectively are made up of first and second case bodies 22 and 32, which are formed with first and second spaces 21 and 31 with a predetermined depth, and first and second case covers 23 and 33, which are coupled with the first and second case bodies 22 and 32 to seal the first and second spaces 21 and 31. Here, the first and second cases 24 and 34 have a flexible structure by coating a metal foil, for example, an aluminum foil, with a composite resin material, but is not limited thereto. As illustrated in FIGS. 3A and 3B, battery unit 10 has two battery (or cell) bodies 25 and 35, and two cases 24 and 34, respectively, one case for each battery body.

[0035] External void 49 is really a space that is external to the cases and is between the cases when the cases are stacked onto each other as in FIG. 3B. External void 49 is external to any of the cases but is located between two adjoining cases. Safety circuit board 40 is disposed within external void 49. Because safety circuit board 40 is within external void 49, safety circuit board 40 does not add any volume or bulk to battery unit 10.

Claim 2

Claim 2 depends from claim 1, wherein the first and second cases each comprise:

a case body (22 and 32) having a space (21 and 31) for accommodating one of the first and the second battery bodies; and

case cover (23 and 33) coupled to the case body to seal the battery body contained within the case body.

Specification

[0031] The first and second secondary battery cells 20 and 30 are made up of first and second cases 24 and 34, respectively. The first and second cases 24 and 34 respectively are made up of first and second case bodies 22 and 32, which are formed with first and second spaces 21 and 31 with a predetermined depth, and first and second case covers 23 and 33, which are coupled with the first and second case bodies 22 and 32 to seal the first and second spaces 21 and 31.

Claim 3

Claim 3 depends from claim 2, wherein each case body comprises *a flanged portion (22a and 32a), the positive and negative electrode terminals perforating the respective case at the flanged portion of the case body.*

Specification

[0034] Meanwhile, the safety circuit board 40 is positioned between the interconnected first and second battery cells 20 and 30 and connects with the first and second positive electrode terminals 26 and 36 and the first and second negative electrode terminals 28 and 38. Preferably, the safety circuit board 40 is installed between a flange portion 22a of the first case body, from which the first positive and negative electrode terminals extend outward, and a flange portion 32a of the second case body, from which the second positive and negative electrode terminals extend outward. This way, the inclusion of safety circuit board 40 does not add to the overall size or

volume of the battery unit 10.

Claim 5

Claim 5 depends from claim 1, claiming that *the first and second battery bodies being helically wound positive and negative electrode plates.*

Specification

[0036] The first embodiment thus far has been described in terms of using the stacked electrode plates of FIG. 1 as the battery bodies 25 and 35 in battery unit 10. However, this invention is not limited thereto. Alternatively, the helically wound battery bodies 55 and 56 of FIG. 2 can be used in the first embodiment instead of the stacked electrode battery bodies 25 and 35 of FIG. 1. Also, one battery body may be stacked and the other may be helically wound. Thus, the arrangement of FIGS. 3A and 3B may mix or match stacked or helically wound batteries.

Claim 6

Claim 6 is directed towards a *pouch-type secondary battery unit (50)*, comprising as shown in Figs. 5A and 5B:

a case (51) comprising a case body (52) having a plurality of spaces (53 and 54), each one of said plurality of spaces being spaced apart from each other by a predetermined distance, said case further comprising a case cover (57) extending from a side of the case body and coupled with the case body to seal all the plurality of spaces, wherein the case cover is folded such that the spaces are stacked on top of each other;

a plurality of battery cells, each battery cell having a battery body (55 and 56) and two electrode terminals (55a and 55b; 56a and 56b), each battery body being disposed in respective ones of said plurality of spaces, each of said battery bodies having positive and negative electrode terminals (55a and 55b; 56a and 56b) extending outward through the case; and

a safety circuit board (40), disposed in an external void (59) defined by the folding of the case cover, the safety circuit board being connected to each of said positive electrode terminals and the negative electrode terminals of each of said plurality of battery cells.

Specification

[0038] FIGS. 5A and 5B illustrate a pouch-type secondary battery unit 50 according to a third embodiment of the present invention. Referring to FIGS. 5A and 5B, the pouch-type secondary battery unit 50 has only a single case 51 and first and second battery bodies 55 and 56. In FIGS. 5A and 5B, helically wound batteries 55 and 56 are illustrated, but stacked type batteries of FIG. 1 may instead be used. In addition, one of the battery bodies may be helically wound and the other may be stacked.

[0039] The case 51 has a case cover 57 and a case body 52, which is formed with two spaces 53 and 54 (FIG. 5A), which are spaced apart from each other by a predetermined distance. The first battery body 55 has first positive and negative electrode terminals 55a and 55b and the second battery body 56 has second positive and negative electrode terminals 56a and 56b. The battery bodies 55 and 56 are inserted into the respective spaces 53 and 54 of the case 51.

[0040] The case body 52 is coupled with the case cover 57 to seal the spaces 53 and 54. The case

body 52 and the case cover 57 may be formed to have an integral structure. The secondary battery unit 50 is folded (FIG. 5B) in such a manner that protruded outer surfaces of the spaces 53 and 54 of the case body 52 come in contact with each other and form an external void 59 between the electrode terminals 55a, 55b, 56a, 56b and between the opposite portions of the folded cover 57. Unlike spaces 53 and 54, external void 59 is not sealed within case 51. Instead, external void 59 is formed between separate folded sections of case 51, each section containing a separate pouch type battery cell. External void 59 is really a space that is external to the case and is disposed between adjoining sections of the case when the case is folded onto itself as in FIG. 5B. In this external void 59, a safety circuit board 40 can be positioned as illustrated in FIG. 5B. As illustrated in FIG. 5B, because safety circuit board 40 is within external void 59 of battery unit 50, safety circuit board 40 does not add any volume or bulk to battery unit 50. In this case, the first and second positive electrode terminals 55a and 56a and the first and second negative electrode terminals 55b and 56b are connected to a signal line of the safety circuit board 40. Preferably, the first and second positive electrode terminals 55a and 56a face each other and the first and second negative electrode terminals 55b and 56b face each other. The battery bodies 55 and 56 may be the same as battery bodies 55 and 56 in FIG. 2 or may be instead like battery bodies 25 and 35 in FIG. 1.

Claim 9

Claim 9 depends from claim 6, claim 9 claiming *each of the battery bodies being helically wound positive and negative electrode plates.*

Specification

[0029] The first and second battery bodies 55 and 56 may be formed by helically winding strip-shaped positive and negative electrode plates, as illustrated in FIG. 2. (Page 8, lines 2-3)

Claim 10

Claim 10 is directed towards a *pouch type battery unit* (80), comprising, as shown in Fig. 6 (also see Claim 6, Figs 5A and 5B and paragraphs [0038] through [0040], above):

a case (70) comprising a case body (71) and a cover (72), the case body being attached to the cover, said case body comprising a plurality of spaces (73);

a plurality of battery bodies, each one being disposed in corresponding ones of said plurality of spaces, each of said battery bodies having two electrode terminals (74) perforating said case body; and

a safety device (40) electrically connected to said terminals of said battery bodies, said case body having a flanged portion that mates with said cover, said safety device being disposed in between two separate sections of said flanged portion when said case is folded onto itself so that each of said plurality of battery bodies are stacked on top of each other.

Specification

[0041] FIG. 6 illustrates a pouch-type secondary battery unit 80 according to the fourth embodiment of the present invention. Referring to FIG. 6, a case 70 is made up of a case body 71 and a case cover 72. The case body 71 is formed with in-line multiple spaces 73. Battery bodies (not illustrated) with exposed electrode terminals 74 are disposed within respective spaces

73. The case 70 is folded in such a manner that the battery bodies overlap each other forming voids therebetween. A safety circuit board 40 is installed in a void defined among the spaces 73 containing battery bodies. As with the other embodiments, the battery bodies may be helically wound as in FIG. 2 or stacked as in FIG. 1 or a combination thereof.

Claim 14

Claim 14 depends from claim 10, and requires *each of said plurality of battery bodies being comprised of electrode plates being helically wound.*

Specification

[0041] As with the other embodiments, the battery bodies may be helically wound as in FIG. 2.

Claim 15

Claim 15 depends from claim 10, and requires *each of said plurality of battery bodies being electrically connected to each other in seriatim.*

Specification

[0029] In this present invention, the term “battery unit” means a group of individual batteries (or cells) interconnected in parallel or in series. (Page 8, lines 4-5)

Claim 16

Claim 16 depends from claim 10, and requires *each of said plurality of battery bodies being electrically connected to each other in parallel.*

Specification

[0029] In this present invention, the term “battery unit” means a group of individual batteries (or cells) interconnected in parallel or in series. (Page 8, lines 4-5)

Claim 17

Claim 17 is directed towards a *pouch type secondary battery unit* (10), comprising, as shown in FIGS. 3A and 3B:

a plurality of secondary battery cells (20 and 30), each battery cell comprising a battery body (25 and 35) disposed in a sealed case (24 and 34), each battery cell further comprising a pair of electrode terminals (26 and 28; 36 and 38) of opposite electrical polarity electrically connected to said battery body and perforating said case; and

a safety circuit board (40) being electrically connected to the terminals of each of said plurality of battery cells, said safety device being disposed in such a way as to not add to the size of the battery unit, each of said plurality of secondary battery cells being stacked on top of each other, each of said cases having a flanged portion (22a and 32a) protruding outward from the battery body, wherein a void (49) is formed in between flanged portions of adjacent stacked battery cells, said void being external to said sealed case, said safety device being disposed within said void.

Specification

[0030] FIGS. 3A and 3B illustrate a battery unit 10 according to the first embodiment of the present invention. Referring to FIGS. 3A and 3B, the battery unit 10 has a first and second

pouch-type secondary battery cells 20 and 30, and a safety circuit board 40, which is installed in a space between the first and second secondary battery cells 20 and 30. Safety circuit board 40 electrically connects first and second positive electrode terminals 26 and 36 and first and second negative electrode terminals 28 and 38 of cells 20 and 30 together.

[0031] The first and second secondary battery cells 20 and 30 are made up of first and second cases 24 and 34, respectively. The first and second cases 24 and 34 respectively are made up of first and second case bodies 22 and 32, which are formed with first and second spaces 21 and 31 with a predetermined depth, and first and second case covers 23 and 33, which are coupled with the first and second case bodies 22 and 32 to seal the first and second spaces 21 and 31. Here, the first and second cases 24 and 34 have a flexible structure by coating a metal foil, for example, an aluminum foil, with a composite resin material, but is not limited thereto. As illustrated in FIGS. 3A and 3B, battery unit 10 has two battery (or cell) bodies 25 and 35, and two cases 24 and 34, respectively, one case for each battery body.

[0034] Meanwhile, the safety circuit board 40 is positioned between the interconnected first and second battery cells 20 and 30 and connects with the first and second positive electrode terminals 26 and 36 and the first and second negative electrode terminals 28 and 38. Preferably, the safety circuit board 40 is installed between a flange portion 22a of the first case body, from which the first positive and negative electrode terminals extend outward, and a flange portion 32a of the second case body, from which the second positive and negative electrode terminals extend outward. This way, the inclusion of safety circuit board 40 does not add to the overall size or volume of the battery unit 10.

[0035] External void 49 is really a space that is external to the cases and is between the cases when the cases are stacked onto each other as in FIG. 3B. External void 49 is external to any of the cases but is located between two adjoining cases. Safety circuit board 40 is disposed within external void 49. Because safety circuit board 40 is within external void 49, safety circuit board 40 does not add any volume or bulk to battery unit 10.

Claim 19

Claim 19 depends from claim 17, and requires *each of said plurality of battery cells being electrically connected to each other in parallel.*

Specification

[0029] In this present invention, the term “battery unit” means a group of individual batteries (or cells) interconnected in parallel or in series. (Page 8, lines 4-5)

VI. GROUNDS OF REJECTION TO BE REVIEWED ON APPEAL

Whether claims 1-11, 13-17, 19 and 20 are patentable under 35 U.S.C. §102(e) over Nortoft et al. (U.S. Patent No. 6,773,848).

VII. ARGUMENTS

Claims 1-11, 13-17, 19 and 20 were rejected under 35 U.S.C. §102(e) as being anticipated by Nortoft et al. (U.S. Patent No. 6,773,848). The applicant respectfully traverses this rejection for the following reason(s).

Claim 1

Claim 1 calls for, in part, *a safety circuit board disposed in an external void within said battery unit, said external void being defined as being in between the first and second secondary battery cells, the safety circuit being electrically connected to the first and second positive electrode terminals and to the first and second negative electrode terminals.*

Nortoft discloses a circuit board 5 disposed between first and second secondary battery cells, however Nortoft fails to disclose:

- A. *an external void within said battery unit, said external void being defined as being in between the first and second secondary battery cells; and*
- B. *a safety circuit board disposed in an external void within said battery unit.*

The Examiner has identified what the Examiner considers to be such an *external void* and refers us to the gap between cells 1 and 1' in Fig. 2b.

Nortoft discloses that the circuit board 5 is **sandwiched** in between the cells 1 and 1'. In

this way, the circuitry on the circuit board is completely protected between the cells. In an alternative arrangement, not illustrated, both cells could be folded on top of the circuit board; again, the circuitry of the board would be protected, though the board itself would have to have a degree of rigidity because its rear surface would be exposed.

Accordingly, there is no *external void within said battery unit* within which the *safety circuit board is disposed*. The void in Nortoft is deemed to be an internal void, or internal gap, in the battery unit as a whole. Nortoft's circuit board 5 may extend into the area the Examiner refers to, however, the circuit board 5 is clearly not *disposed* with that area.

A Random House College Dictionary defines "dispose" (as used in the claim) as "2. to put in a particular or suitable space".

Applicant's Fig. 3B shows an external void 49 in between the two stacked secondary batteries 20/30.

Accordingly, the rejection of claim 1 is deemed to be in error and should not be sustained.

Claim 2

Claim 2 calls for *a case body having a space for accommodating one of the first and the second battery bodies; with the case cover coupled to the case body to seal the battery body contained within the case body.*

Here, the Examiner refers us to Nortoft's col. 3, line 65 through col. 4, line 5, which states:

FIG. 1 shows a pair of flat electrochemical cells 1, 1' connected in series. The cells, which may be lithium-ion batteries or capacitors, are flat cells housed in flexible packages. The exact design structure of the cells is not relevant to the present application, but they may be as described in U.S. Pat. No. 5,445,856, i.e. flat wound cells housed in a thin foil laminate package.

The disclosed "flexible packages", also disclosed as "a thin foil laminate package" are not disclosed as both a case body and a case cover. The "flexible packages" can be deemed equivalent to the claimed *case body having a space for accommodating one of the first and the second battery bodies*, however there is no disclosed *case cover coupled to the case body to seal the battery body contained within the case body*.

And for the record, U.S. Pat. No. 5,445,856, does not describe nor illustrate "flat wound cells housed in a thin foil laminate package".

The Examiner then argues that the flaps 14 in Fig. 6a of Nortoft correspond to the claimed *case cover*.

Note, however, that Fig. 6a is not the same *battery unit* the Examiner referred to with respect to claim 1, but instead is a sixth and separate embodiment. The battery unit referred to by the Examiner with respect to claim 1 is illustrated in Figs 1a to 2b of Nortoft, and there is no case cover.

Furthermore, the flaps 14 are part of the cell package cut long. These flaps 14 will overlap end portions of circuit board 5, but do not cover the cells.

Nortoft discloses that by mechanically connecting these flaps 14 to the circuit board, a

strong connection between the cell and the circuit board is achieved, so that any loads or bending stresses caused by folding of the cells will be taken by the sealing material, rather than by the cell terminals. This greatly reduces the possibility of the electrical connections between the cells and the circuit board being damaged in the folding operation. The flaps can, for example, be connected to the circuit board by gluing or taping.

Accordingly, it is not disclosed that flaps 14 are *coupled to the case body to seal the battery body contained within the case body*. Therefore, flaps 14 do not correspond to the claimed *case cover*.

Accordingly, the rejection of claim 2 is deemed to be in error and should not be sustained.

Claim 3

Claim 3 calls for each case body to comprise *a flanged portion, the positive and negative electrode terminals perforating the respective case at the flanged portion of the case body*.

Here the Examiner has merely referred to Figs. 1b-2b of Nortoft, without identifying that area of the case body deemed to be a *flanged portion*.

Looking to Figs. 1b-2b, we find no element resembling a "flange": A protruding rim, edge, rib, or collar, used to strengthen an object, hold it in place, or attach it to another object.

There is a protruding rim illustrated, however, the case body is disclosed as being flexible and formed of a thin foil laminate. Accordingly, the protruding rim does not strengthen the case body. Nor is it disclosed that the protruding rim is used to hold it in place, or attach it to another

object.

Therefore, the protruding rim, which is actually the laminate's sealing point, does not meet any known definition of a "flange".

The Examiner identifies the same portion of Nortoft's case the applicant refers to as a rim. The Examiner does not traverse the Applicant's definition of "flange", nor does the Examiner suggest that Nortoft's rim meets the well known definition of a flange.

Accordingly, the rejection of claim 3 is deemed to be in error and should not be sustained. See claim 7 also.

Claim 5

Claim 5 requires the first battery bodies be *helically wound positive and negative electrode plates*.

Here the Examiner refers us to Nortoft's Fig. 4e. Fig. 4e is a schematic perspective and partly sectional view of the arrangement of FIG. 4a, in a folded condition; and Fig. 4a is an exploded view of an arrangement of electrochemical cells according to a fourth embodiment of the invention.

There is no disclosure that the electrochemical cells are *helically wound positive and negative electrode plates*, and Fig. 4e does not illustrate *helically wound positive and negative electrode plates*.

The Examiner maintains Figs. 4e and 5d illustrate that the electrochemical cells are wound helically by the positive and negative electrode plates.

Note that one cannot even see any positive and negative electrode plates of Nortoft's electrochemical cells in Figs. 4e and 5d, so it is unclear what the Examiner is looking at, but clearly there are no positive and negative electrode plates illustrated in Figs. 4e and 5d.

Accordingly, the rejection of claim 5 is deemed to be in error and should not be sustained. See claims 9 and 14 also.

Claim 6

Claim 6 calls for *a case comprising a case body having a plurality of spaces, each one of said plurality of spaces being spaced apart from each other by a predetermined distance, said case further comprising a case cover extending from a side of the case body and coupled with the case body to seal all the plurality of spaces, wherein the case cover is folded such that the spaces are stacked on top of each other.*

Here the Examiner refers to Nortoft's Figs 2 and 3a; and col. 3, line 65 through col. 4, line 5. Nortoft's col. 3, line 65 through col. 4, line 5, state:

FIG. 1 shows a pair of flat electrochemical cells 1, 1' connected in series. The cells, which may be lithium-ion batteries or capacitors, are flat cells housed in flexible packages. The exact design structure of the cells is not relevant to the present application, but they may be as described in U.S. Pat. No. 5,445,856, i.e. flat wound cells housed in a thin foil laminate package.

The disclosed "flexible **packages**" of Nortoft's Figs 2 and 3a are not disclosed as *a case body having a plurality of spaces*. The flexible packages are separate packages, and thus are deemed to be separate case bodies, not *a case body having a plurality of spaces*.

Additionally, there is no disclosed *case cover*, and certainly no case cover *coupled with the case body to seal all the plurality of spaces*. Although the separate cells are stacked in Nortoft, there is no case cover *folded such that the spaces are stacked on top of each other*.

Claim 6 also calls for *a safety circuit board, disposed in an external void defined by the folding of the case cover*.

Here the Examiner refers to a separate embodiment (Fig 6b) from the embodiment of Figs 2-3a applied to the first feature of claim 6.

Nortoft discloses that the circuit board 5 is **sandwiched** in between the cells 1 and 1', see Fig. 6a. In this way, the circuitry on the circuit board is completely protected between the cells. Neither of Figs. 6a or 6b illustrate *a case cover extending from a side of the case body and coupled with the case body to seal all the plurality of spaces*.

As noted with respect to claim 2, the Examiner then argues that the flaps 14 in Fig. 6a of Nortoft correspond to the claimed *case cover*.

Note, however, that the flaps 14 will overlap end portions of circuit board 5, but do not cover the cells. Accordingly, it is not disclosed that flaps 14 are *a case cover extending from a side of the case body and coupled with the case body to seal all the plurality of spaces*. Therefore, flaps 14 do not correspond to the claimed *case cover*.

Accordingly, there is no *external void defined by the folding of the case cover* within which the *safety circuit board* is *disposed*. The void in Nortoft is deemed to be an internal void, or internal gap, in the battery unit as a whole. Nortoft's circuit board 5 may extend into the area the Examiner refers to, however, the circuit board 5 is clearly not *disposed* with that area.

A Random House College Dictionary defines "dispose" (as used in the claim) as "2. to put in a particular or suitable space".

Accordingly, the rejection of claim 6 is deemed to be in error and should not be sustained.

Claim 10

Claim 10 also calls for *a case comprising a case body and a cover, the case body being attached to the cover, said case body comprising a plurality of spaces* and is deemed to not be anticipated by Nortoft for the same reasons as claim 6.

That is, none of Nortoft's figures illustrate *said case body comprising a plurality of spaces*. All of Nortoft's figures illustrate separate flexible packages connected together in some fashion by way of being connected to circuit board 5.

Also see the Applicant's traversal above with regard to claim 6 and Nortoft's flaps 14, wherein it was noted that flaps 14 cover a end portions of circuit board 5, but do not cover the cells.

Claim 10 also includes, in part, *said case body having a flanged portion that mates with*

said cover, said safety device being disposed in between two separate sections of said flanged portion.

As noted with respect to claim 3, there are no elements of Nortoft's case body having a flanged portion.

Additionally, there is no *cover* as noted with respect to claims 2 and 6.

Further, there is no disclosure of *a flanged portion that mates with said cover, said safety device being disposed in between two separate sections of said flanged portion.* In Nortoft, the circuit board 5 is sandwiched between the battery cells. See the traversal of claims 1, 3 and 6.

The Examiner fails to address the forgoing traversal of the rejection.

Accordingly, the rejection of claim 10 is deemed to be in error and should not be sustained.

Claim 17

Claim 17 is deemed to be patentable over Nortoft for the same reasons discussed above with respect to claim 10 with regard to the claimed features *wherein a void is formed in between flanged portions of adjacent stacked battery cells, said void being external to said sealed case, said safety device being disposed within said void..*

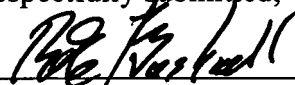
Additionally, it is claimed that *said safety device being disposed in such a way as to not*

add to the size of the battery unit.

Clearly, since the circuit board in Nortoft is sandwiched between the cells 1 and 1', the thickness, thus *the size*, of the batter is increased.

Accordingly, the rejection of claim 17 is deemed to be in error and should not be sustained.

Respectfully submitted,



Robert E. Bushnell
Attorney for Applicant
Reg. No.: 27,774

1522 K Street, N.W.
Washington, D.C. 20005
(202) 408-9040

Folio: P56980
Date: 8/3/07
I.D.: REB/MDP

VIII. APPENDIX

CLAIMS UNDER APPEAL

1 1. (Previously Amended) A pouch-type secondary battery unit, comprising:
2 a first secondary battery cell comprising a first secondary battery body and a first case, the
3 first secondary battery body being disposed inside the first case, the first secondary battery cell
4 further comprising a first positive electrode terminal and a first negative electrode terminal
5 perforating out from said first case;
6 a second secondary battery cell comprising a second secondary battery body and a second
7 case, the second secondary battery body being disposed within the second case, the second
8 secondary battery cell further comprising a second positive electrode terminal and a second
9 negative electrode terminal perforating out from said second case; and
10 a safety circuit board disposed in an external void within said battery unit, said external
11 void being defined as being in between the first and second secondary battery cells, the safety
12 circuit being electrically connected to the first and second positive electrode terminals and to the
13 first and second negative electrode terminals.

1 2. (Original) The battery unit of claim 1, wherein the first and second cases each
2 comprise:
3 a case body having a space for accommodating one of the first and the second battery
4 bodies; and

5 case cover coupled to the case body to seal the battery body contained within the case
6 body.

1 3. (Original) The battery unit of claim 2, wherein each case body comprises a flanged
2 portion, the positive and negative electrode terminals perforating the respective case at the flanged
3 portion of the case body.

1 4. (Original) The battery unit of claim 1, wherein the first battery cell and the second
2 battery cell are positioned so that the first positive electrode terminal is disposed near the second
3 positive electrode terminal and the first negative electrode terminal is disposed near the second
4 negative electrode terminal.

1 5. (Original) The battery unit of claim 1, wherein the first and second battery bodies being
2 helically wound positive and negative electrode plates.

1 6. (Previously Amended) A pouch-type secondary battery unit, comprising:
2 a case comprising a case body having a plurality of spaces, each one of said plurality of
3 spaces being spaced apart from each other by a predetermined distance, said case further
4 comprising a case cover extending from a side of the case body and coupled with the case body
5 to seal all the plurality of spaces, wherein the case cover is folded such that the spaces are stacked
6 on top of each other;

7 a plurality of battery cells, each battery cell having a battery body and two electrode
8 terminals, each battery body being disposed in respective ones of said plurality of spaces, each
9 of said battery bodies having positive and negative electrode terminals extending outward through
10 the case; and

11 a safety circuit board, disposed in an external void defined by the folding of the case cover,
12 the safety circuit board being connected to each of said positive electrode terminals and the
13 negative electrode terminals of each of said plurality of battery cells.

1 7. (Original) The battery unit of claim 6, wherein the case body comprises a flanged
2 portion, the positive and negative electrode terminals extending through the flanged portion.

1 8. (Original) The battery unit of claim 6, wherein the positive electrode terminals of
2 different battery cells in the battery unit are all aligned with each other and the negative electrode
3 terminals of the different battery cells in the battery unit are all aligned with each other.

1 9. (Original) The battery unit of claim 6, wherein each of the battery bodies being
2 helically wound positive and negative electrode plates.

1 10. (Previously Amended) A pouch type battery unit, comprising:
2 a case comprising a case body and a cover, the case body being attached to the cover, said
3 case body comprising a plurality of spaces;

4 a plurality of battery bodies, each one being disposed in corresponding ones of said
5 plurality of spaces, each of said battery bodies having two electrode terminals perforating said
6 case body; and

7 a safety device electrically connected to said terminals of said battery bodies, said case
8 body having a flanged portion that mates with said cover, said safety device being disposed in
9 between two separate sections of said flanged portion when said case is folded onto itself so that
10 each of said plurality of battery bodies are stacked on top of each other.

1 11. (Original) The battery unit of claim 10, said cover of said case being folded onto itself
2 so that each of said plurality of battery bodies are stacked on top of each other.

1 13. (Original) The battery unit of claim 10, each of said plurality of battery bodies being
2 comprised of electrode plates stacked on top of each other and not being wound.

1 14. (Original) The battery unit of claim 10, each of said plurality of battery bodies being
2 comprised of electrode plates being helically wound.

1 15. (Original) The battery unit of claim 10, each of said plurality of battery bodies being
2 electrically connected to each other in seriatim.

1 16. (Original) The battery unit of claim 10, each of said plurality of battery bodies being

2 electrically connected to each other in parallel.

1 17. (Previously Amended) A pouch type secondary battery unit, comprising:
2 a plurality of secondary battery cells, each battery cell comprising a battery body disposed
3 in a sealed case, each battery cell further comprising a pair of electrode terminals of opposite
4 electrical polarity electrically connected to said battery body and perforating said case; and
5 a safety circuit board being electrically connected to the terminals of each of said plurality
6 of battery cells, said safety device being disposed in such a way as to not add to the size of the
7 battery unit, each of said plurality of secondary battery cells being stacked on top of each other,
8 each of said cases having a flanged portion protruding outward from the battery body, wherein
9 a void is formed in between flanged portions of adjacent stacked battery cells, said void being
10 external to said sealed case, said safety device being disposed within said void.

1 19. (Original) The battery unit of claim 17, each of said plurality of battery cells being
2 electrically connected to each other in parallel.

1 20. (Original) The battery unit of claim 17, said safety circuit board being any one of or
2 both of a positive temperature coefficient device and a safety vent.

IX. EVIDENCE APPENDIX

Random House College Dictionary definition of "dispose".

X. RELATED PROCEEDINGS APPENDIX

None.



IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of:

Hyung-Bok LEE

Serial No.: 10/728,850

Examiner: A. Boateng

Filed: 8 December 2003

Art Unit: 2838

For: COMPACT SAFETY DEVICE FOR A POUCH-TYPE SECONDARY
BATTERY UNIT HAVING MANY INDIVIDUAL BATTERIES

Appeal No. _____

Mail Stop Appeal Briefs - Patents
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

ATTENTION: Board of Patent Appeals and Interferences

EXHIBIT A TO APPELLANT'S BRIEF

Random House College Dictionary definition of "dispose".

The Random House College Dictionary

REVISED EDITION

Based on **The
Random House**

ary

